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(54) Open topped tray

(57) A blank for an open topped tray comprises a base 1, pairs of opposite walls 2, 3 to be joined to each other at the tray corners, and stacking ledges 4 folded from the distal edges of a first pair 2 of the walls. One wall of the second pair of walls 3 joins the base 1 along a fold line, outer parts 11 of which adjacent to the tray corners are staggered with respect to a central part 12. Cuts 5 transverse to said fold line where its outer and central parts meet allow the material of the said wall 3 and of the base 1 of the tray to warp on folding and form retaining pockets adjacent to the tray corners to receive tabs 6 folded from the stacking ledges 4 at the ends thereof, the tabs 6 when in place being in edge contact with free edges of the cuts exposed by the warping.

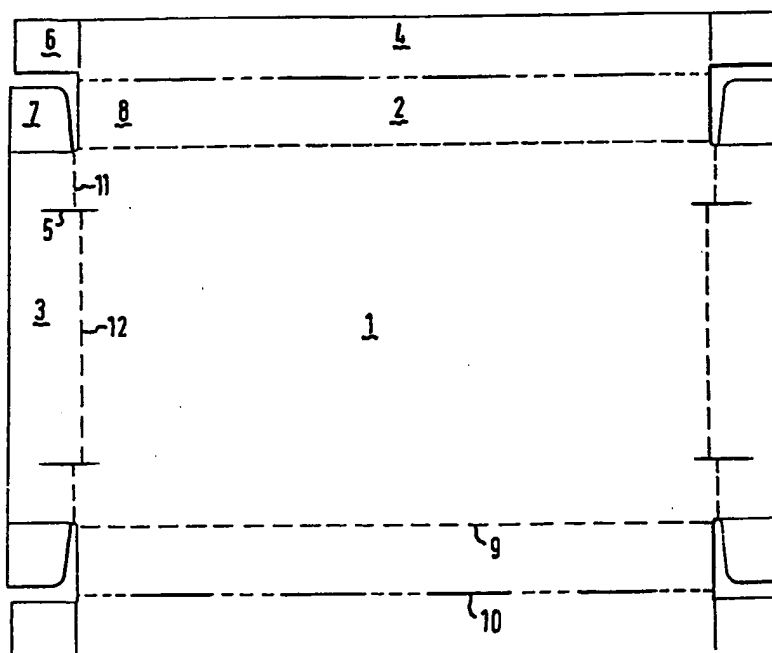


FIG.1

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OPEN TOPPED TRAY

The invention relates to open topped trays, widely used for many purposes and especially for produce.

Trays with stacking ledges are known in many forms but for produce such as tomatoes, which are poured rather than individually placed into the trays, a tray which can be made in a form completely open during filling is desirable.

For this and other purposes the invention provides a blank for an open topped tray with a base, pairs of opposite walls to be joined to each other at the tray corners, and stacking ledges folded from the distal edges of a first pair of the walls, wherein one wall of the second pair of the walls joins the base along a fold line the outer parts of which adjacent to the tray corners are staggered with respect to a central part, and wherein cuts transverse to each said fold line where its outer and central parts meet allow the material of the said wall and of the base of the tray to warp on folding and form retaining pockets in said wall adjacent to the tray corners to receive tabs folded from the stacking ledges at the ends thereof, the tabs when in place being in edge contact with free edges of the cuts exposed by the warping.

Both walls of the second pair may be as specified and then, conveniently, tabs extending from the ends of each wall of the second pair may be provided to be folded round to lie against the walls of the first pair, either freely or, where two stage erection is required, fixed thereof by gluing or other means.

Such a blank may be erected fully for filling with the stacking ledges in place, or in two stages, first by erecting the tray by folding up the walls and gluing or otherwise fixing the corners, then (after filling) by folding the stacking ledge tabs in and the whole ledge down until the tabs

slip into place in the pockets, with their edges locked in by contact with the edges of the central parts of the walls.

In either case the retaining pockets are formed in the first stage, when folding along a line the main central part of which is not continuous with the outer portions forces the portions of the walls next to the tray corners to warp outwards and the central part of the base to warp downwards leaving, in particular, vertical edges of the centre portion of the wall free for contact with and retention of the stacking ledge tabs.

As an alternative to the above construction, one end of the tray can have the staggered fold line and pocket construction but the other have a different form. For example one wall can be as set out but the other foldable medially to give a double wall with its distal edge engaging the base on erection. An open-fronted display tray can thus be provided.

Embodiments of the invention are illustrated by way of example in the accompanying drawings in which:

Fig. 1 is a blank for a tray according to the invention;

Fig. 2 is a corner of a part-erected tray viewed internally;

Fig. 3 is a similar view of the fully erected tray; and

Fig 4 is an external view of a corner of the fully erected tray.

Fig. 5 is a view of a display tray with one side fully erected but the other not, to show the construction.

In the blank of Figs. 1 to 4 there are provided a base 1, side panels 2, end panels 3 and stacking ledges 4. Interruptedly cut fold lines 9 divide the base from the side panel and end panels. The side panels and the stacking ledges are divided from each other by fold lines 10 in which alternate sections are interruptedly and fully cut. The fold lines between the end panels and the base are in three

sections, short outer sections 11 and a longer centre section 12 staggered towards the centre of the base panel. Where the sections meet are short transverse cuts 5, the effect of which is described below. Attached to the stacking ledges 4 are retaining tabs 6 and attached to the end panels 3 are tabs 7 all with fold lines between them and their respective attachments.

The tabs 7 are glued or otherwise fixed in the first stage in two stage erection, but in a tray filled fully erected are retained by the stacking ledges and their retaining tabs without need for separate fixing. In two-stage erection of the tray the tabs 7 are glued and folded up and then the end and side panels raised to fix the gluing tabs to the position 8 on the side panels. The folding of the side panels is conventional but the folding of the end panels on the staggered fold lines 11/12 warps the end panels and the base into the configurations seen in Figures 2 - 4, where the cuts 5 give rise to the edges E and D and thus in effect retaining pockets for the tabs 6, one at each corner of the tray.

These details are readily appreciated from the fragmentary drawings in which Figure 2 shows the side panel and stacking ledges in one plane so that the part erected and glued tray can be filled with products such as tomatoes without obstruction. The gluing positions are at C and the retaining tab marked A and part of the stacking edge marked B are shown in the upright position. When the tray is full of the product the retaining tabs are bent round as shown by the arrow in Figure 2, along the fold line between the retaining tabs and the stacking ledges, and then the stacking ledge itself is folded down so as to carry the retaining tab into the position showing Figure 3 with the retaining tab caught behind the edge of the main central part of the end panel. This is clearly shown in Figure 3 and can be further appreciated from Figure 4 where the retaining tab is seen in dotted outline lying against the face of the outer portion of

the end panel.

The whole construction is of the greatest simplicity being brought if required to the part-erected state on standard machinery (where gluing while the most convenient is not the only fixing means that could be used) and then when filled with the product brought to the stacking configuration by a simple movement of simultaneously folding the retaining tabs at right angles to the stacking ledges and then folding the whole stacking ledge down and allowing the retaining tabs to take up their position. The force needed to retain them is quite sufficiently provided by the tendency of the folded board to straighten along the fold line between the tab and the stacking ledge. The tabs transfer downwards load between the end of the stacking edge and the base panel and the strength of the corners is helped also by the presence of the tabs 7 lying in position to give a double thickness to both the end panels and the side panels at the corners.

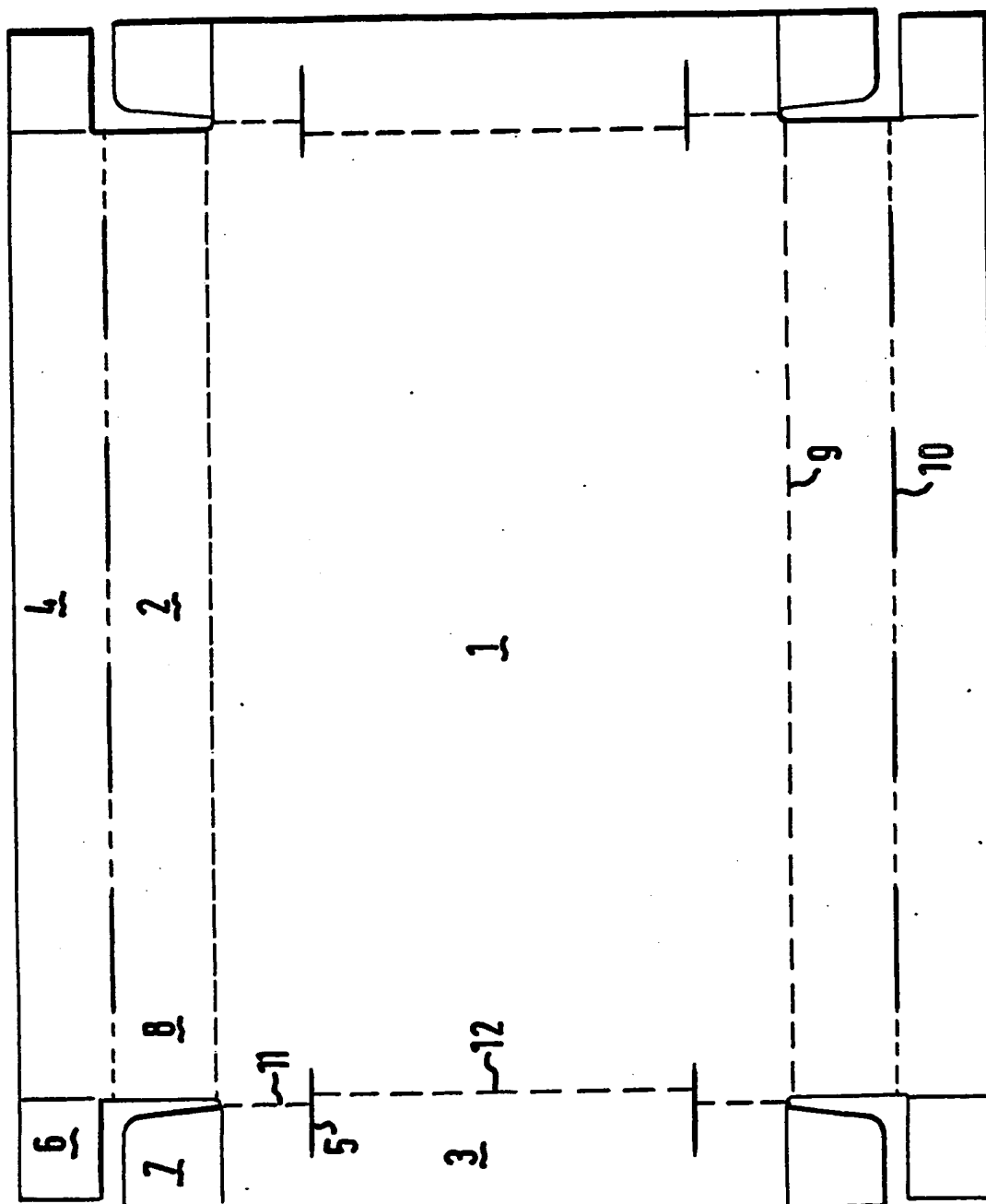
In the different construction of Fig. 5 a base 1, side panels 2, end panel 3, stacking ledge 4, tabs 6 and 7, fold lines 9 and 10 and fold lines 11 and 12 correspond generally to those of Figs. 1 to 4. A deeper tray is however given, open fronted for display, the tabs 7 being large and lying under the greater part of the stacking edges for strength and with a cut back edge 27 to fit there, and a projection 29 on each tab 7 crushing on erection and discouraging movement thereafter.

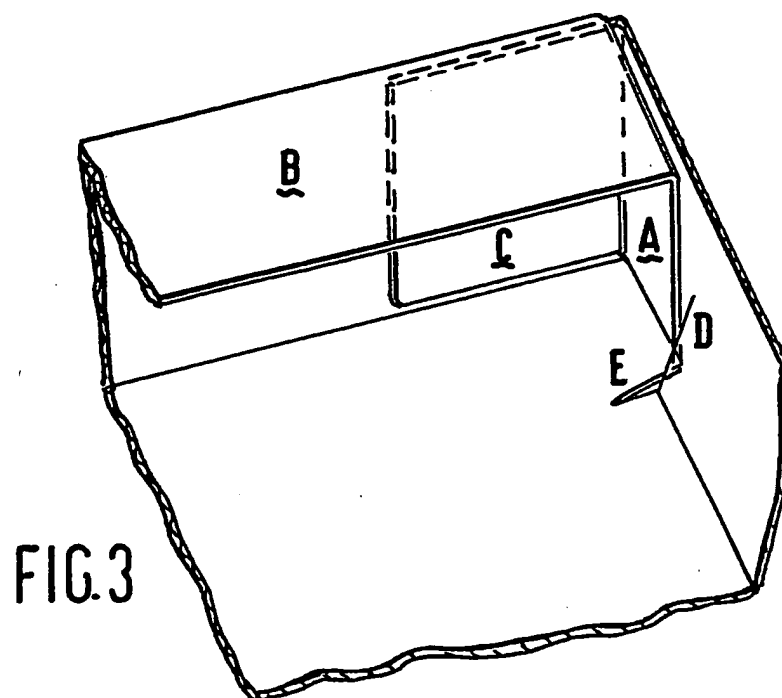
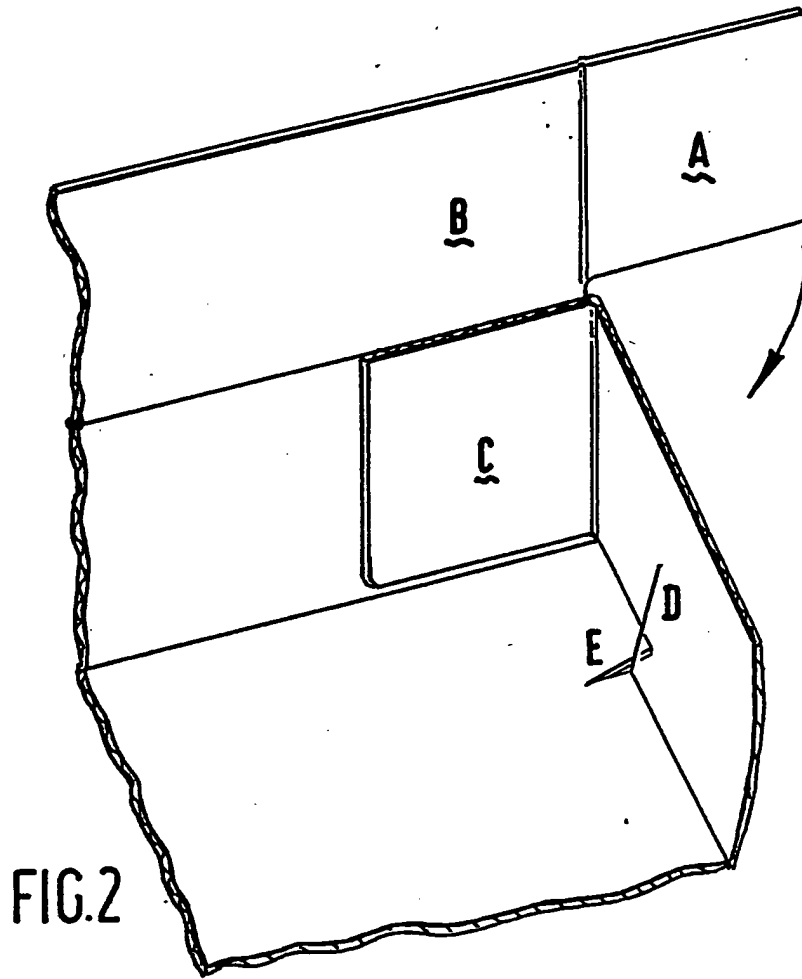
Considering differences, the side panels 2 do not entirely correspond to those of Figs. 1 to 4 as while the long tabs 6 have the same function of locking into pockets formed by the warping, the stacking ledge carries a tab only at the one end. The other end has no tab but instead a tab 25 is provided on the side panel 2 itself to lock between two opposed parts of end wall 21. A cut out 28 allows tabs 24 on the distal part of the end wall to lock into slots 26 in the base 1, the wall folding along lines 21, 22 and 23.

CLAIMS

1. A blank for an open topped tray with a base, pairs of opposite walls to be joined to each other at the tray corners, and stacking ledges folded from the distal edges of a first pair of the walls, wherein one wall of the second pair of the walls joins the base along a fold line outer parts of which adjacent to the tray corners are staggered with respect to a central part, and wherein cuts transverse to each said fold line where its outer and central parts meet allow the material of the said wall and of the base of the tray to warp on folding and form retaining pockets in said wall adjacent to the tray corners to receive tabs folded from the stacking ledges at the ends thereof, the tabs when in place being in edge contact with free edges of the cuts exposed by the warping.
2. A blank according to claim 1, wherein both walls of the second pair are as specified.
3. A blank according to claim 2, wherein tabs extending from the ends of each wall of the second pair are provided, to be folded round to lie against the walls of the first pair either freely or, where two stage erection is required, fixed thereto by gluing or other means.
4. A blank according to claim 1, wherein the other wall of the second pair of the walls is foldable medially to give a double wall with its distal edge engaging the base on erection to give an open-fronted display tray.
5. A tray erected from the blank of any preceding claim.

FIG. 1





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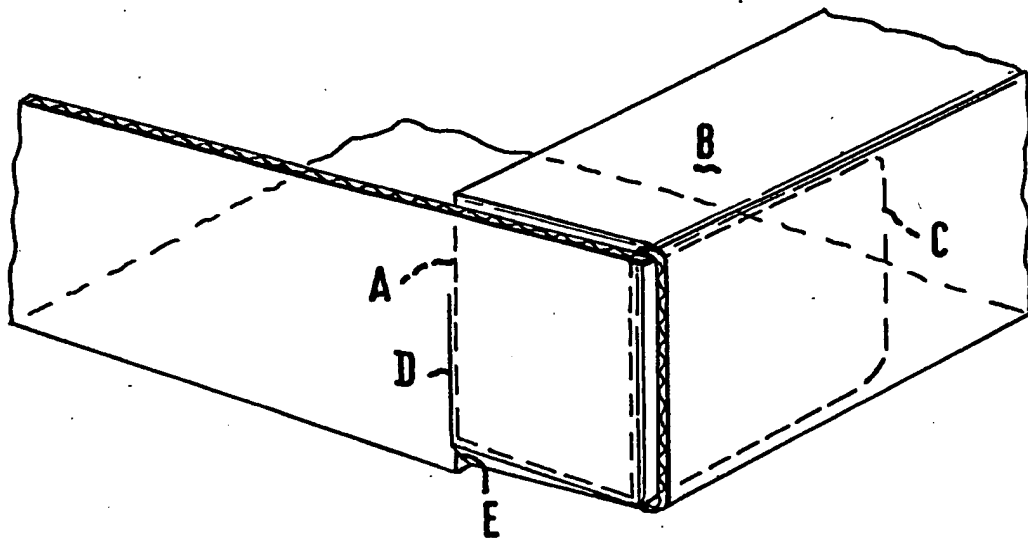


FIG. 4

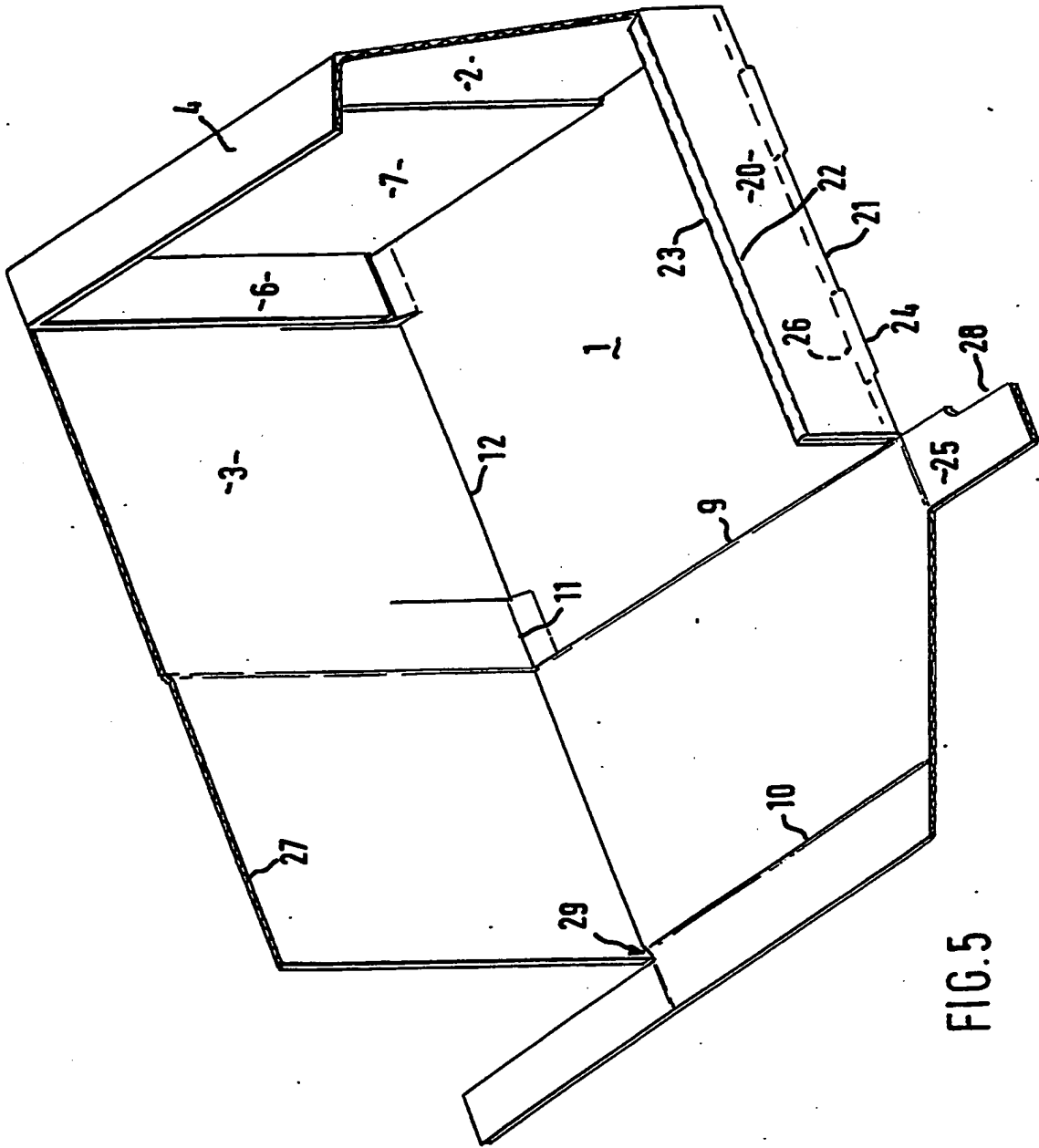


FIG. 5